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# Greenhouse Gossip

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## BARNEY BONEMEAL

sez:

*"A dry creek is an exasperation  
but a flooded one is troublesome."*

And so it is in a greenhouse. During the Summer our humidity in most greenhouses is too low, except in localities where normal high humidity exists in the atmosphere. Where it is low the mere shading of roofs as advocated recently at a meeting is not adequate compensation. True the temperature may be reduced somewhat by shading roofs but the humidity still remains too low to produce the best growth. This is well illustrated by short-

stemmed Roses and small-leaved Gardenias. The better recommendation, despite the scientific explanation that a 10 deg. raise in temperature is equivalent to a 30% raise in humidity in so far as leaf temperature is concerned, is to shade the roofs as we recommended in these pages before and to raise the humidity as well. This, of course, applies to crops which do better with high humidity and obviously not to Carnations or Succulents.

On the other hand during late Fall and Winter, the usual sloppiness which exists in many greenhouses, due to leaky valves, poor unions in pipes and puddles in depressions in walks may cause a lot of trouble by producing soft, succulent growth with subsequent lippy stems and foliage susceptible to all kinds of trouble. There needs to be a happy medium, and common sense and knowledge of plant habits will dictate the procedure.

Perhaps more specifically, we should provide high humidity consistent with fresh air for most Orchids (Phalaenopsis being an exception). As mentioned before, high humidity is desirable for Roses except during the extremely dark weather. Gardenias will take it regularly, although too high a humidity in December may cause bud drop. Hydrangeas will be short-stemmed and small-leaved and small-flowered if kept too dry during the forcing period. Poinsettia leaves and bracts will be too small under similar conditions. On the other hand, Lilies will stretch too much if humidity is too high. Yet in their case if need for high temperature arises for quicker forcing, it should be accompanied by high humidity. Chrysanthemums will produce bigger foliage and larger flowers when the humidity is not too low, while Geraniums and Carnations do better with low humidity. In case of propagation very high humidity will give better rooting of Roses, Gardenias, Poinsettias, Chrysanthemums, Azaleas, Hydrangeas, provided the medium is coarse, well aerated, well drained



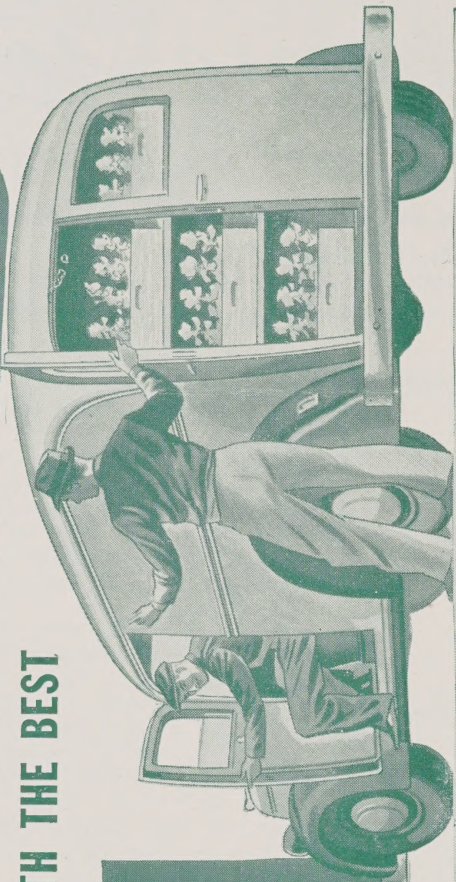
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All of the illustrated plant bands made of fibre-resin materials developed by extensive research work. Tested and proved under all growing conditions by successful greenhouse operators.

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See Page 3 for Price List and Sizes

## SIMPLIFIED SUB-IRRIGATION FOR FLATS

We now have prices established and can make immediate shipment. Also, we can make immediate shipment of the regular Neponset Paper Pots handy and economical for shipping plants from 2 1/4 inch pots to 6 inch pots.

See Our Last Month's January "Gossip"



**PRICE LIST OF VITA-BAND PLANT BANDS**

Sold in Units of 1,000 Only

Sizes in Inches	Vita-Band A	Vita-Band B	Growtex	Neponset
1 3/4 x 1 3/4 x 2 1/2*	\$2.95	\$2.50	\$2.25	\$2.00
2 x 2 x 2 1/2*	3.20	2.70	2.50	2.15
2 x 2 x 3*	3.50	3.10	2.80	2.50
2 1/2 x 2 1/2 x 3	3.75	3.30	3.00	2.75
3 x 3 x 3	4.45	3.55	3.25	3.00
3 x 3 x 4	5.40	4.25	4.00	3.75

\*Fit Tom Thumb Flats

and with bottom heat supplied. That of course is reversed in Carnations, Geraniums, Saint Paulias, etc.

**GRADING SUGGESTIONS.** As given by Russell Davenport, S. S. Pennock Co., Boston, at Ohio Florists' Short Course.

**ROSES.** The new spiral wrap is preferred. This involves laying out as for the old sheet method, two rows with the top row heads laid even with the base of the heads in the first row. When the sheet is rolled it makes a package about the same size top and bottom, very easy to handle in any way. You gain the confidence of a buyer by putting 25 good Roses in every bunch. A buyer, on the other hand, knows well enough how easy it is to hide "culls" in such a bunch and will avoid the Roses of a grower who tries it.

**CARNATIONS.** A fan-shaped bunch protected with a cardboard wrap such as that first used by the N.E.C.G.A. A cardboard wrap giving the added protection that the one the Hill Company uses is even better. In any event the flat bunch is much preferred to the round one. The individual flowers are more easily seen, the bunch is more easily packed. Most important is that there are 25 good blooms in every bunch.

**SNAPDRAGONS.** 12 stems of equal length and strength of stem in each bunch. Tops of heads even and stem ends even. A tie just under the bloom heads. Don't forget to have your stem ends even and to keep the string up a bit from the ends to allow for cutting the stems off a little when necessary. In packing for shipment Snaps very definitely will not stand crushing; don't try to get too many in a box. As you pack put paper of some kind between layers and don't lay white or yellow on newspaper, the print comes off on them.

**STOCKS.** In bunching, stock heads and stem ends should both be even as with Snaps. Keep string up from bottom of stems to allow for crushing of ends of stems without breaking the string. Double Stock, both from a sales angle and a handling angle is better bunched in half dozens. Again a loose tie just under the bloom heads on each bunch. In packing Stock for

shipping remember that it is easy to crush the blooms so badly they won't even regain form in water. Because Stock is heavier than Snap, it is well to divide the layers in your packing box with "pillows" fashioned from newspaper.

**CALLA LILIES.** Bunch them in half dozens with bloom faced so that there is a natural flat back to each bunch. This facilitates both handling and repacking. Tie near end of stems and a loop just under blooms.

**EASTER LILIES.** Under present conditions Easters are better tied in dozens than in 25's, from a sales angle. It is also easier to "face" a dozen Lily heads all one way than it is twice that number. Faced one way with a flat back again is comparatively easy to handle with a minimum of bruising. Once bunched make the tie at the bottom of the stems tight enough to hold the heads in position.

**REGALES, RUBRUMS AND AURATUMS.** It is best not to bunch any of these particular Lilies. Pack them for shipping a stem at a time. It is even well to put protection of some kind between the blooms on each stem. Shredded tissue or shredded wax make an inexpensive and easy to use protection. These three Lilies are much better to ship when cut tight.

**CANDIDUM LILIES.** Bunched by half dozen stems is best. It is very easy to ruin this Lily if extreme care is not taken in packing them if they are cut open. It is far better to cut them and ship them tight. They carry well in a cooler and open well in water.

**DELPHINIUM.** Same bunching rules as for Snapdragons, on the smaller-flowered types. Incidentally, experimenting has shown growers in our area that the Bellamosum and Belladonna are the only two varieties they can produce profitably under glass. They also have found that they obtain best results by cutting on the green side. The large flowering Hybrids are best bunched in half dozens and even more than the small-flowered varieties need to be cut tight. In packing for shipping any Delphinium should be protected with wax paper, not ordinary tissue. Regular tissue apparently takes necessary moisture right out of the blooms, leaving them so wilted they are often beyond repair at the end of a lengthy journey.

**SMALL FLOWERS.** Because very often Peas, Marguerites, and Cornflowers are bunched as they are being picked, without ever seeing a grading bench, a serious oversight is made. No care is taken to keep the ends of the stems even. Strings, in tying bunches, run down to the tip of the longest stem. This makes it most difficult to even the stems with a knife before vasing. If water deep enough to accommodate the shortest stems is put in vases for Cornflowers and Peas, it runs right up the stems



and spoils the blooms in a very short time. Just an inch of water in the bottom of a vase is all you should use if the blooms are to be protected and that is very seldom enough water to assure each of the stems in a vaseful a drink. As a result, Peas and Buttons are often sacrificed in order to be sold on the day of their arrival when one extra night in water would not hurt their overall length of life. Marguerites are not so bothered by water running up the outside of their stems but they do suffer if their stems are not cut. Uneven stems with string to the tip of the longest stem usually results in their being vased without cutting the stems and poor prices result the second day if they are sold then, or whole bunches get thrown away because a half dozen blooms fold up in a bunch from lack of water.

**MUMS, STANDARD.** Bunched flat or in spray form this item is much easier and safer to handle. Larger varieties done in three rows of four. The smaller varieties in rows of five, four and three. In packing for shipping be sure to use a good pillow under your bottom dozen in your boxes and pillows between layers. Also be sure and make each and every dozen fast in your box. Many growers pack flowers loose for shipping, not tied in dozens. While it involves considerably more time to do the latter, it is probably the best practice to follow on large blooms.

**MUMS, POMPONS.** These are the biggest "headache" of all cut flowers, mainly because no standard has ever been set for the bunching of them. How this standard is ever going to be set is quite a question. Through the season just finished we received bunches weighing from 8 ozs. to 17 ozs., stems from 15 in. to 48 in. Bunches containing as few as four stems, some up to 24 stems. We tried to check this year and the results of it point to a 12-oz. bunch with stems from 30 in. to 36 in. long, with a loose tieup near the blooms and a loose paper wrapper to protect the blooms in handling. Once a standard weight can be agreed on, to avoid the added time it takes to weigh each bunch, the method practiced by Harry Allyn of Elmira, N. Y., appealed to me. Every cutting day he weighed and bunched one bunch of every variety they were cutting himself, and gave it as a sample to each buncher. I know the results were satisfactory from the selling end. You can't help but get quite a variance in the number of stems per bunch because of the great difference in the habit of growth of different varieties, but how a buyer hates to pay \$2.00 for four stems. Can you blame him? Four rules for you exclusive of setting your bunch weight: (1) If you are shipping any distance, put a tissue wrapper around the heads of each bunch, but *don't* make it too tight; (2) Don't put too many

bunches in a box; (3) If there is one kind of cut flower that should have the stems kept *even* in every bunch, it is the Pompon; (4) Watch your varieties and don't waste bench room on weak-stemmed types even though they do produce, be they Button or Daisy types. There is nothing harder to sell than poor Pompons.

**GARDENIAS AND CAMELLIAS.** With either of these two flowers it has been our experience that there are two things for the grower to be careful about: (1) use a box that is plenty big or if you use only one size box, cut down the number of blooms you put into it rather than get them too near the sides or ends; (2) be sure that each individual bloom is locked in place in its box and that it is fastened in a manner that will not allow it to "wobble" around. Camellias particularly on the second point. They have to be wired together anyway and if they aren't set down into shredded wax or something to keep them from rocking enroute, the continued movement of this nature results in shattered blooms on arrival at destination or blooms that fall apart when you go to take them out of their box.

**GERBERA.** Twelve in a bunch and when possible of the same color. The big worry with Gerbera seems to be getting it to market in good condition. Mr. Van Bourgondien of Babylon, N. Y., has arrived at an apparent solution in having cartons made that allow for placing the stems in paper containers upright. The stems of this flower are so soft they are very easily damaged. When bruised they double over and have to be cut off between the bruise and the bloom to salvage them.

**GLADIOLUS.** There is only one way for Glads to be cut for shipment from Florida to northern markets, as we all know—tight. A great deal more attention has been paid by Florida growers to their grading in recent years with result benefitting all. The grower who produces Glads up in our part of the country and is able to transport them himself is in a position to make all shipped in Glads take a back seat while he is cutting. We have two of the latter who through concentrating on careful grading, bunching and handling enroute to market, fared very well indeed even in "not so good" times. In those times we were able to consistently sell their Glads for from 75c. to \$1.25 per dozen while shipped in and other local stock of comparable quality but carelessly prepared for market ran from 15c. to 35c. and 40c.

#### WHAT CAUSES PLANT DISEASES.\*

When considered in a broad sense, disease in plants may be due to a number of causes in-

\*Talk given by Dr. Paul Tilford—Ohio Agr. Expt. Sta. at Ohio Florists Short Course.





cluding parasitic agencies, such as fungi, bacteria, viruses, and animals; and nonparasitic factors, such as unfavorable environment and improper nutrition. In this discussion we will consider only parasitic diseases.

1. FUNGI. Common examples of diseases caused by fungi are blackspot and mildew of Rose, rust and *Alternaria* blight of Carnations, verticillium wilt of *Chrysanthemums* and dozens of others.

Fungi are low forms of plant life which are unable to carry on photosynthesis. Many species are beneficial in that they decompose only now living organic materials. The parasitic species which obtain their food from living plants and in doing so injure the plants are the ones which cause disease.

Fungus material consists primarily of threads called mycelium. The mycelium grows between and through plant cells, destroying the cells and thus causing disease. Most fungi produce spores which are comparable to seeds of higher plants. The method of spore production varies greatly in different species of fungi. Spores may form either on or in the mycelium or may be produced in special structures or fruiting bodies. The method of spore production; spore size, shape and color; and the characteristics of the mycelium are used as a basis to classify fungi into genera and species.

Fungus diseases are disseminated in various ways. Spores may be distributed by splashing water (blackspot of Roses during syringing). The spores may float in air currents (Rose mildew). Spores and mycelium may be carried on or in seed, bulbs, cuttings, etc. (Aster wilt, Tulip fire). Infested soil is a common means by which disease carries over from one crop to the next.

Environment, particularly as it relates to temperature and moisture, influences the development of fungus diseases just the same as it influences the growth of higher plants. Spores will not germinate and cause infection except in the presence of sufficient moisture and within a certain temperature range. Most fungus diseases will develop under the moisture and temperature conditions favorable for the host plant but by properly controlling temperature and humidity in the greenhouse disease development can be greatly retarded. The control of environment and strict attention to sanitation rank high as disease control measures in any floral establishment.

2. BACTERIA. Crown gall, soft rot of Calla Lily, bacterial blight of Carnation, fasciation of Sweet Pea, *Chrysanthemum* and some other plants, scab of *Gladiolus* are common examples of diseases caused by bacteria.

Bacteria are like fungi in that they cannot carry on photosynthesis.

They are extremely small, single celled organisms, although some species occur in chains or clumps. An average sized bacterium would be about .5 by 1.5 microns. A micron is .000039 inches. Bacterial cells may be spherical or short rods. They may be motile or non-motile. Some species, such as the crown gall organism, will cause disease in many different species of plants; whereas others will attack only certain varieties of a single species.

They are transmitted on tools, in soil, by splashing water, and on plant parts.

Infection occurs through wounds and frequently through stomata. Abundant moisture is necessary for infection to occur.

The bacteria grow between and in the plant cells, either killing the cells or stimulating them to abnormal activity and thus cause disease.

3. VIRUSES. Mosaics of Stocks, Sweet Pea, Lily, Dahlia, Rose; breaking of Tulips; crinkle of *Geranium*; and Aster yellows are examples of virus diseases.

Virus particles are ultramicroscopic in size, lying in the region between 250 to 10 millimicrons (a millimicron is 1/1000 of a micron). Only a very few viruses have been isolated in the pure state and they have been found to be proteins.

Viruses are transmitted in cuttings and bulbs but very seldom in seeds. In some instances they are transmitted by merely handling plants. Sucking insects, such as aphids and leafhoppers are common transmitting agents.

4. ANIMALS. In this class we will consider only nematodes, although certain other animals may cause a disease condition in plants.

Nematodes are microscopic eel worms. Some species infest only the roots of plants, whereas others attack only foliage. They will live in the soil for a fairly long period of time even though susceptible plants are not present.

In this state nematodes are usually killed by freezing during the Winter if they are free in the soil out of doors. They survive freezing temperatures when they are inside of roots, such as Peony, Rose, Clematis and others.

They are eliminated from soil by sterilization, heat and certain types of chemical treatments.

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“Commercial Flower Forcing”, a most valuable book of helpful information for growing nearly all plants and flowers in greenhouses.





HYDRANGEA, 3-in. POT

### CARNATION CUTTINGS

There has been an active demand and many varieties particularly the newer kinds are almost sold out for this entire season. If you still need Carnation Stock, let us know and we will advise you what deliveries can still be made.

### NEW RED CARNATION

For Next Year

We are now booking orders for next Winter delivery for the new Red Carnation WILLIAM SIM—a new scarlet seedling; color almost like King Cardinal. A brighter shade than Tom Knipe. An early bloomer and a very free blooming variety. Variety will be patented:

Rooted Cuttings:

\$20.00 per 100, \$150.00 per 1000

*Deliveries all booked up until February, 1946*

### CHRYSANTHEMUMS

We are booking orders now and can still supply nearly all the varieties you want. Some kinds are pretty well booked up until late delivery. Don't delay ordering what you want in MUMS. If you haven't our catalog of MUMS—ask for same.

We have an excellent list of Hardy Early Flowering POMPONS in the various types from 2¼ inch pots. Ask for this special list.

### FANCY-LEAVED CALADIUMS

Sorry we are completely sold out.

### CALLAS

A few yellow Callas are still left in some sizes.

### AMARYLLIS

The same applies to Amaryllis.

### NARCISSUS (Paperwhite Bulbs)

Still have a few Narcissus Paperwhite Bulbs.

### AIRPLANE CLOTH

Inasmuch as Black Cloth for shading Mums is practically unobtainable we have again been fortunate in securing a small quantity of Airplane Cloth, same as we sold to some of our customers last year. This cloth is much superior to Black Cloth and can be used many times. The bolts run from:

244 yards to 333 yards each

They are 36 inches wide. Contact us if you need any.

### ORCHID PLANTS

We have to offer about a hundred Orchid Plants in miscellaneous varieties for the florist who wants to grow a few Orchids in his greenhouses. We have such kinds as:

EPIDENDRUM  
ONCIDIUM

DENDROBIUM  
COELOGYNE

STANHOPEA, etc.

Ask for list if interested. All blooming size plants.

### HYDRANGEAS

While some varieties are sold out, we can at this writing still supply many of the good varieties in Rooted Cuttings and 2¼ in. pots for Spring delivery. Don't delay ordering.



HYDRANGEA CUTTINGS

